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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/034,620

12/27/2001

James W. Overbeck

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05/25/2006

CHIEF INTELLECTUAL PATENT COUNSEL
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EXAMINER

NGUYEN, THONG Q

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 05/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/034,620

Applicant(s)

OVERBECK, JAMES W.

Examiner

Thong Q. Nguyen

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 62-81 and 91-97 is/are pending in the application.
- 4a) Of the above claim(s) 66-67 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 62-65, 68-81 and 91-97 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The present Office action is made in response to the amendment filed on 3/10/2006. It is noted that in the mentioned amendment, applicant has made changes to the claims and the specification. Regarding to the claims, applicant has amended claim 62 and canceled claim 92 (first occurrence because the pending claim contained two claimed numbered as claim 92). The remaining claims are claims 62-81 and 91-97. Claims 62-65, 68-81 and 91-97 are examined in this Office action. Claims 66-67 are non-elected claims.

Specification

2. The lengthy specification which is amended by the amendment of 3/10/06 has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

3. The rejection of claims 62-65, 68-71 and 94-97 under 35 U.S.C. 112, first paragraph, is now withdrawn due to the amendment to the claim 62.

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 62-63, 68-69, 95 and 97, as best as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Kimura (U.S. Patent No. 5,241,364, of record).

Kimura discloses a confocal microscope for examining object which is able to include sample of living organism or sample having fluorescent agent (see columns 1 and 2). The microscope as described in columns 21+ and shown in figures 9-11 comprises a stand supporting a scanning assembly and a driving mechanism for driving the scanning assembly. The scanning assembly (115) comprises a scan arm supporting an objective lens (117) wherein the light path from the end of the fiber (114) to the surface of the object (123) is kept constant when the scanning assembly (115) is oscillated by the driving mechanism (133) along a main scanning direction which direction is parallel to the plane of the object surface. It is noted that the light path from the object (123) to the detecting system (139 or 141) is also maintained constant during the scanning process. The microscope also comprises another support (151) supporting the object and a driving mechanism for moving the object in a sub-scanning direction. Regarding to the feature related to a focusing mechanism as recited in the newly-added material to the claim 62, such a feature is understood that the device claimed comprises a mechanism for moving/tilting the stage support a specimen. The support for that conclusion is found in the present specification in pages 28-29. In that aspect then it is noted that in column 20, lines 52 through column 21, lines 5 of the patent No. 5,241,364, Kimura discloses that the support (151) and the piezoelectric (149, 147) are operated to bring the specimen (123) into focus so that the information in the focal plane is detected by the detecting elements (139, 141). The light from the object is guided to a detecting system (136-141)

which collects data during the scanning motion and processes the collected data.

Regarding to the feature that the numerical aperture of the objective lens is larger than 0.5 as recited in claim 68, such a feature is inherently from the system provided by Kimura because an objective used in a high speed scanning must have a large numerical aperture as admitted by the applicant in the present specification in page 4.

Regarding to the feature that the optical path defined by the displaced objective lens and the scanning assembly extends partially over an axis of the scanning motion as newly-added to the claim 62, such a feature is also disclosed by Kimura as can be seen in columns 13-14 and shown in figs. 1-3. Applicant should note that the driving mechanism (133) is in the form of a piezo-electric device for moving the scanning assembly (115) in a scanning direction (X). See column 13 and figs. 2-3 and the optical path defined between the output end of the fiber of the light source is extended over the axis of the scanning motion defined by the piezo-electric drive. See fig. 9 which shows that the upper section of the scanning assembly (115) is positioned over the piezo-electric drive (133).

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
7. Claims 62 and 65, as best as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kain et al (U.S. Patent No. 5,578,818, of record) in view of Nomura et al (U.S. Patent No. 4,948,330, of record).

Kain et al discloses a scanning system for scanning a sample and for guiding fluorescent light from the sample to a detecting system. The scanning system as described in column 5 and shown in figure 7 comprises a scanning assembly (20) supporting optics having filters (18, 22), beamsplitters (24) and objective (32) wherein the light path defined between the output end of the fiber (44) to the surface of the object to be scanned in a plane perpendicular to the light path is has a constant length.

Regarding to the feature that the optical path defined by the displaced objective lens and the scanning assembly extends partially over an axis of the scanning motion as newly-added to the claim 62, such a feature is also disclosed by Kain et al as can be seen in column 3 and shown in fig. 7. Applicant should note that the scanning movement as provided by Kain et al are made by moving the scanning assembly (20) is one direction, i.e., X-direction, and the stage is moved in other direction, i.e., Y-direction, perpendicular to the direction in which the scanning assembly (20) is moved. The optical path from the output end of the fiber and the objective lens (32) has a portion, see the light path from the output end of the fiber to the beam splitter (24), is extended over the axis of scanning motion in Y- direction of the stage.

The only feature missing from the scanning system provided by Kain et al is that they do not disclose that a focus mechanism including a tilting mechanism for moving the specimen for the purpose of focusing. However, the use of a stage supporting a sample wherein the stage is driven by a mechanism which is able to

drive the stage in a plane perpendicular to the direction of a light path and also able to tilt the stage for focusing is known to one skilled in the art as can be seen in the stage for use with a microscope provided by Nomura et al. See columns 3-4 and figs 1 and 3. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the scanning system provided by Kain et al by using a mechanism as suggested by Nomura et al for driving the stage in a plane perpendicular to the light path for the purpose of presenting different areas of a large object to the scanning system and for tilting the stage for the purpose of focusing.

8. Claims 68-71 and 97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kain et al in view of Nomura et al as applied to claim 62 above, and further in view of Mathies et al (U.S. Patent No. 5,091,652, of record).

The combined product provided by Kain et al and Nomura et al as described above does not clearly state that the fluorescent object is a DNA chip comprised biological material or arranged for hybridization of a biological material. However, the use of a scanning system for observing a DNA sample contained biological material is known to one skilled in the art as can be seen in the scanning system provided by Mathies et al. See columns 4-6. It is also noted that the use of an objective lens having a numerical aperture larger than 0.5 is suggested by Mathies et al as can be seen in column 3, lines 53-57. Thus, it would have been obvious to one skilled in the art at the time the invention was made to utilize/modify the combined product provided by Kain et al and Nomura et al as

suggested by Mathies et al by using the product for observing a DNA sample contained a biological material and an objective lens having a numerical aperture of 1.3 for providing a wide field of view.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 62-65, 68-81 and 91-97 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-35 of U.S. Patent No. 6,201,639 in view of Kimura (U.S. Patent No. 5,241,364, of record).

The device as claimed in claims 1-35 of the Patent '639 discloses a wide field of view scanner having a scanning mechanism supporting an objective lens and a mechanism for driving the scanning assembly. The features related to a driver, the detector in the form of a position element, light source, light detector, translation system for producing movement of the object and data processing system are disclosed as can be seen in claims 1-2, 6-7, 9-11, 15, 19, 21 and 23. The only feature missing from the device of the mentioned Patent claims is that

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they do not clearly state that the light path from the light source to the object has a constant length. However, the use of a scanning system having a scanning assembly supporting objective lens and the output end of a fiber of an illuminating system in a microscope wherein the path length from the output end of the fiber to the object has a constant length during a scanning process is known to one skilled in the art as can be seen in the microscope provided by Kimura. In particular, Kimura discloses a confocal microscope for examining object which is able to include sample of living organism or sample having fluorescent agent (see columns 1 and 2). The microscope as described in columns 21+ and shown in figures 9-11 comprises a stand supporting a scanning assembly and a driving mechanism for driving the scanning assembly. The scanning assembly (115) comprises a scan arm supporting an objective lens (117) wherein the light path from the end of the fiber (114) to the surface of the object (123) is kept constant when the scanning assembly (115) is oscillated by the driving mechanism (133) along a main scanning direction which direction is parallel to the plane of the object surface. . It is noted that the light path from the object (123) to the detecting system (139 or 141) is also maintained constant during the scanning process. The microscope also comprises another support (151) supporting the object and a driving mechanism for moving the object in a sub-scanning direction. Regarding to the feature related to a focusing mechanism as recited in the newly-added material to the claim 62, such a feature is understood that the device claimed comprises a mechanism for moving/tilting

the stage support a specimen. The support for that conclusion is found in the present specification in pages 28-29. In that aspect then it is noted that in column 20, lines 52 through column 21, lines 5 of the patent No. 5,241,364, Kimura discloses that the support (151) and the piezoelectric (149, 147) are operated to bring the specimen (123) into focus so that the information in the focal plane is detected by the detecting elements (139, 141). The microscope also comprises another support (151) supporting the object and a driving mechanism for moving the object in a sub-scanning direction. The light from the object is guided to a detecting system (136-141) which collects data during the scanning motion and processes the collected data.

Regarding to the feature that the optical path defined by the displaced objective lens and the scanning assembly extends partially over an axis of the scanning motion as newly-added to the claim 62, such a feature is also disclosed by Kimura as can be seen in columns 13-14 and shown in figs. 1-3. Applicant should note that the driving mechanism (133) is in the form of a piezo-electric device for moving the scanning assembly (115) in a scanning direction (X). See column 13 and figs. 2-3 and the optical path defined between the output end of the fiber of the light source is extended over the axis of the scanning motion defined by the piezo-electric drive. See fig. 9 which shows that the upper section of the scanning assembly (115) is positioned over the piezo-electric drive (133). Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the scanning system recited in the claims 1-35 of

the patent '639 by using a scanning assembly supporting the objective lens and the point source as suggested by Kimura for the purpose of maintaining the length of the light path constant.

Response to Arguments

11. Applicant's arguments filed on 3/10/06, pages 11-13, have been fully considered but they are not persuasive.

A) Regarding to the rejection of claims 62-63, 68-69, 95 and 97, over the art of Kimura. Applicant's arguments as provided in the amendment, pages 11-12 have been fully considered but they are not persuasive for the following reasons.

First, applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

Second, applicant has argued that Kimura does not disclose a scanner having the feature that the light path from the light source to the scanned surface and from the scanned surface to the detecting system is kept constant which path extends partially over an axis of scanning motion. The Examiner respectfully disagrees with the applicant's viewpoint and respectfully invited the applicant to review the art of Kimura. In particular, the microscope as described in columns 21+ and shown in figures 9-11 comprises a stand supporting a scanning assembly and a driving mechanism for driving the scanning assembly. The

scanning assembly (115) comprises a scan arm supporting an objective lens (117) wherein the light path from the end of the fiber (114) to the surface of the object (123) is kept constant when the scanning assembly (115) is oscillated by the driving mechanism (133) along a main scanning direction which direction is parallel to the plane of the object surface. It is noted that the light path from the object (123) to the detecting system (139 or 141) is also maintained constant during the scanning process. Regarding to the feature that the optical path defined by the displaced objective lens and the scanning assembly extends partially over an axis of the scanning motion as newly-added to the claim 62, such a feature is also disclosed by Kimura as can be seen in columns 13-14 and shown in figs. 1-3. Applicant should note that the driving mechanism (133) is in the form of a piezo-electric device for moving the scanning assembly (115) in a scanning direction (X). See column 13 and figs. 2-3 and the optical path defined between the output end of the fiber of the light source is extended over the axis of the scanning motion defined by the piezo-electric drive. See fig. 9 which shows that the upper section of the scanning assembly (115) is positioned over the piezo-electric drive (133).

B) Regarding to the rejection of claims 62 and 65 under the combination art of Kain et al and Nomura et al, applicant's arguments as provided in the amendment of 3/10/06, pages 12-13, have been fully considered but they are not persuasive.

First, applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

Second, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Third, In response to applicant's argument the art of Kain et al does not disclose that the optical path defined by the displaced objective lens and the scanning assembly extends partially over an axis of the scanning motion as newly-added to the claim 62, the Examiner respectfully disagrees with the applicant and respectfully invites the applicant to review the art of Kain et al. In column 3 and shown in fig. 7, e scanning movements as provided by Kain et al are made by moving the scanning assembly (20) in one direction, i.e., X-direction, and the stage is moved in other direction, i.e., Y-direction, perpendicular to the direction in which the scanning assembly (20) is moved. The optical path from the output end of the fiber and the objective lens (32) has a portion, see the light path from the output end of the fiber to the beam splitter (24), is extended over the axis of scanning motion in Y- direction of the stage.

Fourth, in response to the applicant's arguments that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it is a common knowledge to one skilled in the art to focus the light in the scan bead provided by Kain et al on the object during the scanned surface so that the detecting system will collect the data in the focus plane to warrant the quality of the image. If the object to be scanned is not in the focus plane of the scanning head then it would have been obvious to one skilled in the art to either move the scanning head or the stage support the specimen/object so that the surface of the object in the focus plane of the scanning head. In that aspect then the mechanism for moving the object as provided by Nomura et al is an example of moving the object for bring the object into the focus plane of an observation system. One skilled in the art would have been obvious to utilize the focus mechanism provided by Nomura et al for moving the object in the system of Kain et al for the purpose of bringing the object into focusing of the scanning head so that quality of image detected by the detecting system is obtained.

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C) Regarding to the rejection of the claims 62-65, 68-81 and 91-97 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-35 of U.S. Patent No. 6,201,639 in view of Kimura, it is noted that all features of the device as claimed are disclosed by the combination of the art as provided by the claims 1-35 of the Patent '639 and Kimura, and thus the rejection is maintained for the reason as set forth in this Office action.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

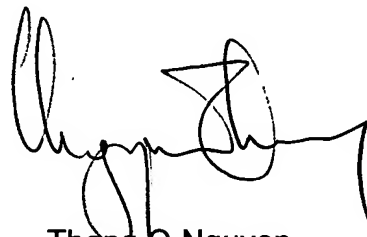
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Nguyen whose telephone number is (571) 272-2316. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Thong Q. Nguyen', with a stylized flourish at the end.

Thong Q. Nguyen
Primary Examiner
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